Appendix I - Statewide Communication

Statewide Communication

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Executive Overview

For citizens, business and government, the ability to communicate and share information is essential for making decisions. It is imperative that secure and reliable data is readily available - whether it's for a businesswoman to understand the details of a product before investing or for a police officer responding to an emergency.

Different media have been developed to enable communication and data sharing, including cellular phones, cable, radio and the Internet. Because these technologies often overlap, the challenge is not deciding which one to use, but rather which combinations to get the right information to decision makers.

Demands to meet homeland security needs and citizens' expectations call for instantaneous and constant communication. This comes with a high price. Keeping cost down requires streamlined services and interoperable communications. The Michigan Public Safety Communications system (MPSCS) currently provides interoperable communications to state and several local government first responders. With just under 200 towers supporting approximately 29,500 radios, this is the largest system of its kind in the U.S.

Michigan must continue to do more with less. The communications infrastructure must be a "utility" that serves as a building block for new and changing services across all state agencies. Effective central oversight and management of the state's entire communications infrastructure provides consistent and standard services, savings in support costs and technical training, and purchasing volume to contract negotiations.

The state's chief information officer (CIO) has established a task force to develop a consolidation strategy for Michigan's communication systems. This group will:

- Define required characteristics of various types of communications tools (how fast, reliable, secure, widespread, etc.)
- Assess capabilities of existing and emerging technologies to, for example, ensure that the state's first responders have interoperable communications in an emergency, including the role of MPSCS in this important public safety component
- Align the communications technologies to state needs

This consolidated approach will build new and greater capabilities to share infrastructure, applications and contract opportunities with local governments. It will also fulfill citizens' expectations of a government that is "always on."

Communications in Michigan

For citizens, businesses and government in the information age, the ability to communicate and share information with each another is the foundation that enables decision-making and business deals. From a businesswoman discovering the details of a potential investment to a police officer responding to a disturbance, having secure and reliable information is imperative to getting the job done.

As a result, growth has increased in the development of different media used to communicate timely information to decision-makers. Telephone, cell phone, cable, radio and Internet are all used to provide services that overlap with each other. The question that remains should not be which one technology is best to use, but how can we ensure that we have the right infrastructure in place so that we can use the tools necessary to provide decision-makers with the right information at the right time.

In today's economy, the delivery of government services requires instantaneous and consistent communication of information, internally and externally, to meet constituent expectations. While they enhance efficiencies and provide long-term value, the technologies that support this communication require an investment of government's already-shrinking budget.

With the immediacy of today's homeland security issues, first responders must have the ability to communicate seamlessly. Homeland security responses require multiple agencies to respond simultaneously, working together to coordinate their efforts. As a result, the need for interoperability and secure communication is evident now more than ever.

Michigan's Sense of Urgency

The needs to reduce costs, streamline services, and provide interoperable communications have been recognized as priorities for the State of Michigan. The state's communications infrastructure must be a utility that serves as a building block for new and changing services across all state agencies. Increasingly mobile workers will rely on the availability and consistency of the communications infrastructure in every agency and at every work location across the state. Their sense of safety and security is challenged by the unknown – will their phone work if they face a hostile situation? If a customer needs to leave an urgent message for assistance, will the voicemail system work? Central oversight of the state's entire communications infrastructure is necessary to supply the consistent and standard systems needed for the provision of services, savings in support costs and technical training, and purchasing volume for contract negotiations.

Governor Granholm declared in her 2005 State of the State Address that the State of Michigan must provide interoperable communications to Michigan's first responders by 2008. However, this is not just a concern for Michigan – it is a national concern. The U.S. Department of Homeland Security has proclaimed enhancing interoperable communications as one of its seven national strategies.

While corporate best practices point toward the central management of wireless, voice, video, and data by the IT department, Michigan presently uses a hybrid, "cautious adopter" approach. Michigan still uses a mixed distributed/federated management model for wireless, voice, and video services, but has centralized data services management within the Department of Information Technology (MDIT). Additionally, most other states employ a distributed/federated model of wireless, voice, video and data services management, negotiating consolidated contracts and managing their use at the agency level. Michigan can continue its IT leadership by centralizing all communications services management within a single agency.

The Vision of Michigan Telecommunications

Telecommunications includes powerful tools that enable people and businesses to accomplish their goals. The State of Michigan's telecommunications plans for the next five years include:

- Consolidating all wireless, voice, video, and data services contracts under MDIT administration
- Setting standards for technologies and interoperability
- Making MDIT contracts "mandatory use"
- Including agencies' service delivery staff in requirements gathering and planning

More specifically, MDIT's plans include:

Voice Communications

1. In 2006, we will consolidate all telecommunication contracts under MDIT and centralize oversight of contract products, services, use, and spend. Agency-focused requirements will be gathered. Technology and product standards will be established, including standard contact center technology services and brand-office voice technology services. High-risk sites will see aged equipment replaced with new standard products. We will also pilot Internet Protocol (IP) telephony sites within 2006.

2. In 2007, planned replacement and upgrades of equipment at high cost and high risk locations will continue. Local voice services will be centralized within MDIT Telecommunications. Centralized voice, video and mobility applications (including voice mail) will be developed. Greenfield sites will be brought on with IP Telephony.

3. Planned equipment replacements and upgrades will continue in 2008. All upgrade sites will be IP Telephony. MDIT Telecommunications will prepare for the next technology and services change by refreshing state standards throughout 2008.

4. In 2009, we will merge central and branch-office systems, as well as complete planned replacement and upgrades at any remaining locations. New contracts for "2nd decade" technology and services will be developed.

Wireless (Cellular Technologies)

1. In 2006, we will consolidate all wireless (cellular provider) service contracts and provide centralized oversight of contract products, services, usage and spending within MDIT Telecommunications.

2. In 2007, we will work to increase the usage of wireless voice and data technologies and enable mobile workers to maintain enterprise presence anywhere in the state.

3. In 2008, the wireless contract will be rewritten and we will enable seamless roaming from state facilities to commodity wireless networks (WiFi-cellular convergence) for voice and data services.

4. By 2009, we will ensure seamless services delivery between wire-line and wireless networks for voice and data.

Data Communications

1. In 2006, MDIT will centralize and rate services of the local area network (LAN) within Telecommunications. We will then upgrade bandwidth for all state agency sites and increase the multi-media transport capabilities of the data backbone. The security of data network entry points will be increased, which will enable the increase in targeted use of secured (virtual private network [VPN] commodity transport from Internet service providers[ISP]) for non-critical small-office, home office, and mobile-office sites and users. The number of intranet WiFi overlays will be increased to further enable the mobile state workforce.

2. In 2007, we will upgrade to very-high bandwidth (>=10Mb) for large (>150 users) state offices and pilot high-speed wireless data trunks or mesh network overlays on state campuses. We will also develop network-based user authentication, certification, and authorization security services for the intranet.

3. In 2008 we will integrate the wire-line and wireless backbones and upgrade to very-high bandwidth in intra-metro and metro-campuses.

4. In 2008, we will increase commodity VPNs for intranet sites and begin developing new contracts for "2nd decade" technologies.

5. Beginning in 2010, MDIT Telecommunications will begin the "2nd decade" technology refresh cycle for voice, wireless, and data communications.

The Vision of Michigan Public Safety Communication System

The events of September 11th, recently repeated in Egypt and London, provide an important lesson - effective interoperable communications during times of crisis are a matter of life and death. Recognizing the concerns over hometown security and the real threats to our safety, Michigan has elevated the criticality of interoperable public safety communications as a component of the information technology infrastructure deployed on behalf of the citizens and visitors of this state.

When public safety communication systems are interoperable, police, fire, and EMS staff responding to an incident can talk to one another to coordinate efforts. Specifically, interoperability refers to the ability of first responders and their commanders to share information via voice and data signals on demand, in real time, where needed, and as authorized.

Interoperable communications, from an IT perspective, means across the enterprise all first responders (state, local and federal agencies) can wirelessly communicate through a common network. A central Network Communication Center continually monitors the system, activates special talk groups during events, enforces system security measures and allows for safe, encrypted communications. Access to specific radio talk groups is well-planned and assigned to different groups of users.

Michigan is aggressively promoting interoperable communications for the estimated 79,000 first responders helping protect citizen safety. Four initiatives have been identified to meet the overall goal to "Provide fully interoperable communications amongst first responders for crises."

1. Complete tactical communication plan for interoperable communications by end-of-year 2006.

   A Michigan Public Safety Communications System (MPSCS) Advisory Board was appointed by the governor and is charged with coordinating the development of the Michigan Interoperable Communications Plan (MICP). The MICP will: a) define in times of emergencies, who must talk to whom, and when; b) assess where MPSCS and other business practices are today to support emergency situations, and c) identify gaps between today's practices and technology and where Michigan needs to be to meet the overall goal.

2. Development of strategy to bridge the gap identified in assessment of current ability to achieve interoperable communications (fiscal year 2007).

   The MICP will identify gaps between today's practices and technology to meet the overall goal. During fiscal years 2006 and 2007, the strategy to bridge the gaps will be detailed and necessary resources will be either redeployed when possible or enhanced as authorized.

3. All first responders will have interoperable communications by 2008.

   The initiative will strive to insure that all first responders are either MPSCS members or the public safety communication systems they use are effectively integrated with MPSCS in times of emergencies.

4. Assure continuity of interoperable communications for first responders by 2010.

   Part of the overall strategy is to insure the system is financially secure so that upgrades, expansions and life-cycle replacements are handled uniformly and expeditiously.

Michigan's Next Step for Communication

Michigan's chief information officer (CIO) has established a task force to develop a consolidation strategy for the state's communication systems. This task force, comprised of MDIT Telecommunications and MPSCS staff, will provide on-going strategic planning, including:

- Defining requirements of the various types of communications, such as how fast, how reliable, how secure, how widespread, etc.
- Assessing the capabilities of existent and emerging technologies to meet defined requirements of the various communications types
- Selecting the communications technologies required to meet the various needs
- Determining the steps that must be taken to develop the infrastructure to support the selected technologies

Some of the items the task force is currently considering include the criteria, requirements, and redundancy in current and future communications; coverage area (state geography); future technology and media direction (e.g. wireless); 700 MHz spectrum range; VoIP and IP telephony; and business continuity planning.

Upon successfully completing this planning process, Michigan will have the tools to make informed decisions regarding the application of technologies to meet the State of Michigan's communication needs. This careful consideration will enable Michigan to wisely invest in its communications systems. Michigan will also realize the following key benefits:

- Advancing the technology base of the State of Michigan, thereby attracting new technology businesses
- Building new opportunities to share infrastructure, applications, and contract savings with local governments
- Enabling more rapid and cost-effective development of citizen-serving applications and communications channels to citizens, providing more opportunities for "always on" citizen services and information availability